



ALFRED MANN FOUNDATION

Status Briefing of Medical Micropower Proceeding

October, 2009

Background

- FCC adopted a rulemaking that would provide secondary access to 413-457 MHz spectrum for wideband medical service
 - NPRM issued in March, 2009
 - Initial comment period ended on August 11, 2009
 - Reply period concluded on September 11, 2009

Comments on MMN NPRM

- Supporters
 - Filed comments strongly supporting FCC proposal to allow MMN devices in the 413-457 MHz band
 - More than 50 supporting parties
 - Include a broad spectrum of interests, including Congressional leaders, government agencies, veterans organizations, medical research and treatment establishments, non-profit organizations, equipment manufacturers, doctors, scientists, and individuals with disabilities
- Detractors
 - Filed comments opposing the proposed MMN operations
 - Only a handful of parties
 - Include incumbent land mobile radio (APCO, LMCC, Motorola), broadcast auxiliary (MSTV and SBE), and amateur radio (ARRL)

Opposing Comments

- **MMN opponents concede significant public interest benefits offered by MMNs**
- Speculate, without support, that other spectrum alternatives are viable
 - WMTS spectrum in the 608-614 MHz band
 - Part 90 medical telemetry spectrum above 450 MHz are viable spectrum alternatives
- Unfounded claims of harmful interference, primarily from incumbent services to MMNs
- Motorola offered the only technical analysis
 - Purports to show harmful interference from MMNs to land mobile radio
 - Analysis fatally flawed due to reliance upon erroneous or irrelevant assumptions
- No party alleged harmful interference from MMNs to remote pickup broadcast or amateur radio services

Response to MMN Opponents

- Lower 400 MHz band is ideal for wireless medical implant devices
 - Conclusion supported by data and accepted by both the FCC and the scientific community
 - Critical factors support conclusion
 - RF signal propagation within the human body
 - physical size and power consumption of implant devices
 - international frequency compatibility
- WMTS and Part 90 medical telemetry spectrum are unsuitable
 - over-populated with other commercial, high-power transmitters
 - FCC rules limit the use of these bands to health care facilities to measure and record patient-related information
 - Mobile, more complex functions of MMN devices fall well outside the intended use of these frequencies

Response to MMN Opponents

- MMNs are designed specifically to avoid causing harmful interference to incumbent services through numerous operational factors and techniques
 - low power operation
 - low duty cycle
 - wideband operation
 - near-ground operation.
- MMNs will not receive harmful interference from incumbent services
 - message coding
 - spectral notching
 - dynamic channel switching
 - wideband operation
 - timing and filtering

Joint Interference Analysis with JSC

- AMF has entered into an agreement with JSC to perform interference analysis and, if required, testing to determine RF compatibility between MMNs and incumbent government operations, including LMR and radiolocation systems, in the 413-450 MHz band.
- The joint interference analysis is expected to commence in fiscal year 2010.
- AMF expects that the results will satisfy concerns regarding potential interference to and from both government and non-government operations, including LMR, radiolocation, remote pickup broadcast, and amateur radio services.